

Rating  
**Hold**North America  
United StatesConsumer  
Autos & Auto PartsCompany  
**Tesla Inc.**Reuters  
TSLA.OQBloomberg  
TSLA UNExchange  
NMSTicker  
TSLADate  
3 May 2018

## Forecast Change

Price at 2 May 2018 (USD)	301.15
Price target	365.00
52-week range	385.00 - 252.48

## 1Q18 a Bit Better, but Model 3 Ramp Remains the Story

Tesla's Q1 was a bit better than we expected w/r/t gross profit, improving 500 bps sequentially to 18.8% (we expected 200 bps), largely on improved profitability of Model S/X (improved to >25% vs. ~20% in 4Q17). As expected, Model 3 experienced a significant negative gross margin. Free cash burn in the qtr was roughly \$900 MM, weaker than our (\$500 MM) estimated, entirely due to working capital variances (e.g. higher number of in-transit S/X had a \$120 MM negative impact, while the sharp ramp-up in Model 3 deliveries late in the qtr negatively impacted Receivables by \$169 MM; both items were cash inflows at the start of Q2).

Investors' main questions related to the trajectory of Model 3 production, the trajectory of profitability, and the trajectory of free cash flow/burn. In addressing these questions Tesla reiterated its near-term production target of 5,000 Model 3's per week by the end of Q2, while providing some additional color on the current state of play. Improvements at Gigafactory have ramped-up sustained battery pack production to 3,000/wk, with the Body Shop at Fremont also sustaining that level of build. Tesla is still working to get Fremont Final Assembly and its Paint Shop up to the sustained 3,000 run-rate. Interestingly, the company noted it believes it will get M3 up to 5k/wk by 2Q without implementation of its new, automated battery assembly line (developed at its Groehmann facility). This line is expected to come online in 3Q18 and should both increase M3 production (we est by 2,000-2,500/wk), while lower manufacturing costs.

Perhaps most importantly, TSLA reiterated their target of achieving positive free cash flow during 2H18. This is nothing new, though confidence around achieving this target clearly remains the most critical (potentially positive) near term driver of Tesla's shares.

The only noteworthy new negative datapoint was Tesla also pushed out the timeline for achieving their 25% gross margin target on Model 3 to 2019 from 2H18. Mgmt. attributed this push-out to raw materials, tariffs, FX, and additional labor needed to circumvent automated production bottlenecks.

### Other key takeaways:

- Record demand for Model S/X (though we anticipate that questions will remain about German Lux competitors entering in 2019, or even competition from Model 3 once production ramps)

### Valuation & Risks

#### Rod Lache

Research Analyst  
+1-212-250-5551

#### Shreyas Patil

Research Associate  
+1-212-250-3916

#### Andrew Richard

Research Associate  
+1-212-250-6559

### Key changes

EPS (USD)	-0.64 to -2.38	↓	271.9%
Revenue (USDm)	23,012.6 to 22,759.0	↓	-1.1%

Source: Deutsche Bank

3 May 2018

Autos &amp; Auto Parts

Tesla Inc.



- There's still a solid demand pipeline for Model 3, with 450,000 orders (and we would anticipate orders could accelerate once the vehicle wait time declines).
- Major questions about manufacturing competitiveness (i.e. comparative labor hours per vehicle, depreciation per vehicle, etc) remain. Our high level work does not suggest that Tesla is competitive (e.g. Depreciation per Model 3 at "under \$2,000" compares with other OEM's at \$1,000-\$1,500). But we do not believe that a thousand dollar cost disadvantage will derail the company's profit targets... the Model 3 ASP of \$55,000+ can accommodate near term weaknesses in manufacturing.

#### Updated Estimates and Valuation:

We have fine-tuned our estimates following 1Q results and updated guidance. Overall, we expect Auto gross margins of 21% in 2018 (25% for Model S & X, with M3 getting to 20% by 4Q18). We estimated cash burn of \$500 MM in 2Q18 (total cash position of \$2.2 bn, the lowest point in the yr but still well above TSLA's \$1.0-\$1.5 bn minimum cash level), with positive free cash flow by 4Q18 (see Exhibit 1 for more details). Our DCF-derived TP remains unchanged at \$365. Overall, while we admire the ambitiousness of Tesla's goals, and there are clear signs strong demand remains for the company's core products, we remain cognizant of the significant execution risks. As such, we maintain our Hold rating.

#### Forecasts and ratios

Year End Dec 31	2017A	2018E	2019E
1Q EPS	-1.74	-3.80A	-
2Q EPS	-1.73	-1.86	-
3Q EPS	-3.23	0.76	-
4Q EPS	-3.62	2.31	-
FY EPS (USD)	-10.35	-2.38	12.29

Source: Deutsche Bank estimates, company data



Figure 1: TSLA Summary Metrics

Tesla Key Metrics	1Q17	2Q17	3Q17	4Q17	1Q18E	2Q18E	3Q18E	4Q18E	F2017	F2018E	F2019E	F2020E
<b>Deliveries</b>												
Model S	13,501	12,016	14,065	15,305	10,070	10,000	20,000	13,500	54,887	53,570	53,570	53,570
Model X	11,550	10,010	11,865	13,120	11,730	11,000	12,000	12,000	46,545	46,730	46,730	46,730
Model 3 / Y	-	-	220	1,542	8,180	27,000	48,000	64,500	1,762	147,680	350,000	500,000
<b>Total</b>	<b>25,051</b>	<b>22,026</b>	<b>26,150</b>	<b>29,967</b>	<b>29,980</b>	<b>48,000</b>	<b>80,000</b>	<b>90,000</b>	<b>103,194</b>	<b>247,980</b>	<b>450,300</b>	<b>600,300</b>
<b>Auto Revenue (\$MM)</b>	<b>2,290</b>	<b>2,287</b>	<b>2,363</b>	<b>2,702</b>	<b>2,735</b>	<b>3,658</b>	<b>5,789</b>	<b>6,236</b>	<b>9,641</b>	<b>18,419</b>	<b>28,318</b>	<b>33,034</b>
Auto Gross Profit	637	646	442	527	555	614	1,185	1,462	2,252	3,815	6,840	8,577
<b>Gross Margin</b>	<b>27.8%</b>	<b>28.3%</b>	<b>18.7%</b>	<b>19.5%</b>	<b>20.3%</b>	<b>16.8%</b>	<b>20.5%</b>	<b>23.4%</b>	<b>23.4%</b>	<b>20.7%</b>	<b>24.2%</b>	<b>26.0%</b>
Gross Margin ex-ZEV	27.8%	25.0%	18.7%	13.8%	18.8%	16.8%	20.5%	23.4%	21.1%	20.5%	24.2%	26.0%
Service/Energy/Other Revenue	193	216	304	288	263	285	395	523	1,001	1,466	1,927	2,544
Service/Other Gross Profit	(21)	(55)	(63)	(89)	(118)	(54)	(87)	(71)	(228)	(330)	(104)	(67)
Gross Margin	-11.0%	-25.4%	-20.7%	-30.7%	-44.6%	-19.1%	-22.0%	-13.6%	-22.8%	-22.5%	-5.4%	-2.6%
<b>Total Revenue</b>	<b>2,696</b>	<b>2,790</b>	<b>2,985</b>	<b>3,288</b>	<b>3,409</b>	<b>4,542</b>	<b>6,941</b>	<b>7,868</b>	<b>11,759</b>	<b>22,759</b>	<b>34,677</b>	<b>41,784</b>
Total Gross Profit	678	674	459	455	472	725	1,264	1,558	2,266	4,018	7,829	10,100
<b>Gross Margin</b>	<b>25.1%</b>	<b>24.2%</b>	<b>15.4%</b>	<b>13.8%</b>	<b>13.8%</b>	<b>16.0%</b>	<b>18.2%</b>	<b>19.8%</b>	<b>19.3%</b>	<b>17.7%</b>	<b>22.6%</b>	<b>24.2%</b>
EBITDA	223	264	(22)	6	(39)	271	786	1,080	471	2,097	5,464	7,276
margin	8.3%	9.5%	-0.7%	0.2%	-1.1%	6.0%	11.3%	13.7%	4.0%	9.2%	15.8%	17.4%
EBIT	(154)	(125)	(423)	(464)	(455)	(194)	263	547	(1,165)	161	3,196	4,755
margin	-5.7%	-4.5%	-14.2%	-14.1%	-13.4%	-4.3%	3.8%	7.0%	-9.9%	0.7%	9.2%	11.4%
Net Income	(282)	(285)	(540)	(609)	(643)	(321)	134	415	(1,716)	(415)	2,186	3,305
<b>EPS</b>	<b>\$ (1.74)</b>	<b>\$ (1.73)</b>	<b>\$ (3.23)</b>	<b>\$ (3.62)</b>	<b>\$ (3.80)</b>	<b>\$ (1.86)</b>	<b>\$ 0.76</b>	<b>\$ 2.31</b>	<b>\$ (10.35)</b>	<b>\$ (2.38)</b>	<b>\$ 12.29</b>	<b>\$ 18.23</b>
Basic Shares	162.1	165.2	167.3	168.3	169.1	172.5	176.0	179.5	165.7	174.3	177.8	181.3
Diluted Shares	165.1	165.2	167.3	168.3	169.1	172.5	176.0	179.5	166.5	174.3	177.8	181.3
<b>FCF Adj for Indirect Leasing</b>												
GAAP Operating Cash Flow	(69.8)	(200.2)	(300.6)	509.9	(398.4)	364.4	679.3	1,292.9	(60.7)	1,938.2	5,182.0	5,903.0
Collateralized Lease Borrowing	241.1	149.3	80.8	211.7	86.9	110.7	101.8	81.0	682.9	380.4	357.5	719.9
<b>Core Operating Cash Flow</b>	<b>171.3</b>	<b>(50.9)</b>	<b>(219.8)</b>	<b>721.6</b>	<b>(311.4)</b>	<b>475.1</b>	<b>781.1</b>	<b>1,373.8</b>	<b>622.2</b>	<b>2,318.6</b>	<b>5,539.5</b>	<b>6,622.9</b>
CAPEX	(552.6)	(959.1)	(1,116.4)	(786.7)	(655.7)	(973.5)	(826.0)	(494.8)	(3,414.8)	(2,950.0)	(3,200.0)	(3,300.0)
<b>Adjusted FCF</b>	<b>(381.4)</b>	<b>(1,009.9)</b>	<b>(1,336.2)</b>	<b>(65.1)</b>	<b>(967.1)</b>	<b>(498.4)</b>	<b>(44.9)</b>	<b>879.0</b>	<b>(2,792.6)</b>	<b>(631.4)</b>	<b>2,339.5</b>	<b>3,322.9</b>
<b>Total Change in Cash Position</b>	<b>613.4</b>	<b>(970.7)</b>	<b>494.1</b>	<b>(162.1)</b>	<b>(745.3)</b>	<b>(411.9)</b>	<b>33.7</b>	<b>970.2</b>	<b>(25.3)</b>	<b>334.0</b>	<b>3,114.7</b>	<b>3,967.3</b>

Source: Company filings, Deutsche Bank estimates



# Appendix 1

## Important Disclosures

\*Other information available upon request

Disclosure checklist			
Company	Ticker	Recent price*	Disclosure
Tesla Inc.	TSLA.OQ	301.15 (USD) 2 May 2018	1, 2, 6, 7, 8, 9, 14, 15

\*Prices are current as of the end of the previous trading session unless otherwise indicated and are sourced from local exchanges via Reuters, Bloomberg and other vendors. Other information is sourced from Deutsche Bank, subject companies, and other sources. For disclosures pertaining to recommendations or estimates made on securities other than the primary subject of this research, please see the most recently published company report or visit our global disclosure look-up page on our website at <https://research.db.com/Research/Disclosures/CompanySearch>. Aside from within this report, important risk and conflict disclosures can also be found at <https://research.db.com/Research/Topics/Equities?topicId=RB0002>. Investors are strongly encouraged to review this information before investing.

## Important Disclosures Required by U.S. Regulators

Disclosures marked with an asterisk may also be required by at least one jurisdiction in addition to the United States. See Important Disclosures Required by Non-US Regulators and Explanatory Notes.

1. Within the past year, Deutsche Bank and/or its affiliate(s) has managed or co-managed a public or private offering for this company, for which it received fees.
2. Deutsche Bank and/or its affiliate(s) makes a market in equity securities issued by this company.
6. Deutsche Bank and/or its affiliate(s) owns one percent or more of a class of common equity securities of this company calculated under computational methods required by US law.
7. Deutsche Bank and/or its affiliate(s) has received compensation from this company for the provision of investment banking or financial advisory services within the past year.
8. Deutsche Bank and/or its affiliate(s) expects to receive, or intends to seek, compensation for investment banking services from this company in the next three months.
14. Deutsche Bank and/or its affiliate(s) has received non-investment banking related compensation from this company within the past year.
15. This company has been a client of Deutsche Bank Securities Inc. within the past year, during which time it received non-investment banking securities-related services.

## Important Disclosures Required by Non-U.S. Regulators

Disclosures marked with an asterisk may also be required by at least one jurisdiction in addition to the United States. See Important Disclosures Required by Non-US Regulators and Explanatory Notes.

1. Within the past year, Deutsche Bank and/or its affiliate(s) has managed or co-managed a public or private offering for this company, for which it received fees.
2. Deutsche Bank and/or its affiliate(s) makes a market in equity securities issued by this company.
6. Deutsche Bank and/or its affiliate(s) owns one percent or more of a class of common equity securities of this company calculated under computational methods required by US law.
7. Deutsche Bank and/or its affiliate(s) has received compensation from this company for the provision of investment banking or financial advisory services within the past year.
9. Deutsche Bank and/or its affiliate(s) owns one percent or more of any class of common equity securities of this company calculated under computational methods required by India law.

For disclosures pertaining to recommendations or estimates made on securities other than the primary subject of this research, please see the most recently published company report or visit our global disclosure look-up page on our website at <https://research.db.com/Research/Disclosures/CompanySearch>

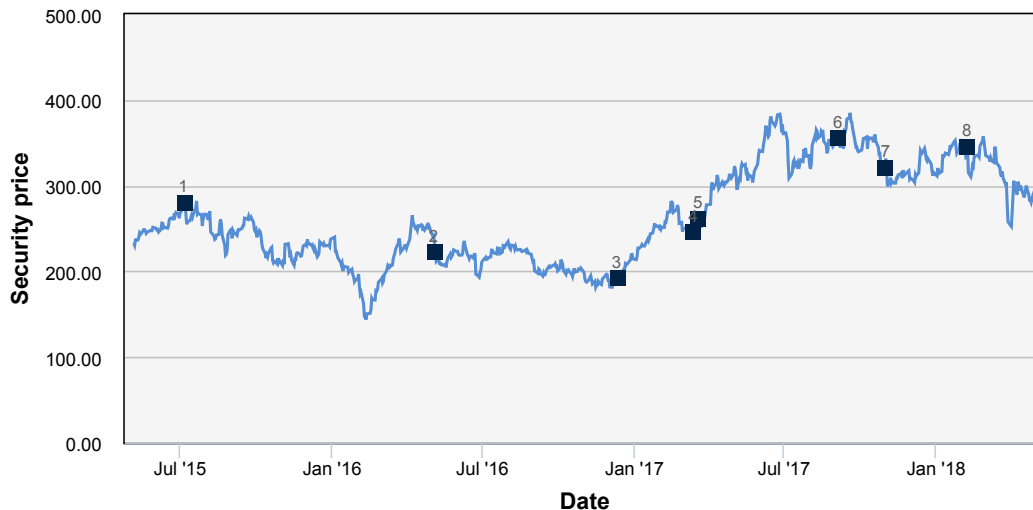
## Analyst Certification



The views expressed in this report accurately reflect the personal views of the undersigned lead analyst(s) about the subject issuer and the securities of the issuer. In addition, the undersigned lead analyst(s) has not and will not receive any compensation for providing a specific recommendation or view in this report. Rod Lache

#### Historical recommendations and target price. Tesla Inc. (TSLA.OO)

(as of 05/02/2018)



#### Current Recommendations

Buy  
Hold  
Sell  
Not Rated  
Suspended Rating

\*\* Analyst is no longer at Deutsche Bank

1.	07/07/2015	Hold, Target Price Change USD 280,00 Rod Lache	5.	03/20/2017	Hold, Target Price Change USD 240,00 Rod Lache
2.	05/05/2016	Hold, Target Price Change USD 290,00 Rod Lache	6.	09/05/2017	Hold, Target Price Change USD 320,00 Rod Lache
3.	12/12/2016	Hold, Target Price Change USD 215,00 Rod Lache	7.	11/02/2017	Hold, Target Price Change USD 310,00 Rod Lache
4.	03/14/2017	Hold, Target Price Change USD 220,00 Rod Lache	8.	02/08/2018	Hold, Target Price Change USD 365,00 Rod Lache

#### Equity Rating Key

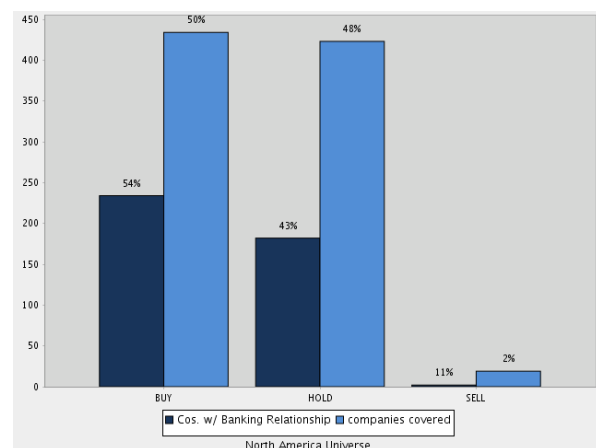
**Buy:** Based on a current 12-month view of total share-holder return (TSR = percentage change in share price from current price to projected target price plus projected dividend yield), we recommend that investors buy the stock.

**Sell:** Based on a current 12-month view of total share-holder return, we recommend that investors sell the stock.

**Hold:** We take a neutral view on the stock 12-months out and, based on this time horizon, do not recommend either a Buy or Sell.

Newly issued research recommendations and target prices supersede previously published research.

#### Equity rating dispersion and banking relationships





## Additional Information

The information and opinions in this report were prepared by Deutsche Bank AG or one of its affiliates (collectively "Deutsche Bank"). Though the information herein is believed to be reliable and has been obtained from public sources believed to be reliable, Deutsche Bank makes no representation as to its accuracy or completeness. Hyperlinks to third-party websites in this report are provided for reader convenience only. Deutsche Bank neither endorses the content nor is responsible for the accuracy or security controls of those websites.

If you use the services of Deutsche Bank in connection with a purchase or sale of a security that is discussed in this report, or is included or discussed in another communication (oral or written) from a Deutsche Bank analyst, Deutsche Bank may act as principal for its own account or as agent for another person.

Deutsche Bank may consider this report in deciding to trade as principal. It may also engage in transactions, for its own account or with customers, in a manner inconsistent with the views taken in this research report. Others within Deutsche Bank, including strategists, sales staff and other analysts, may take views that are inconsistent with those taken in this research report. Deutsche Bank issues a variety of research products, including fundamental analysis, equity-linked analysis, quantitative analysis and trade ideas. Recommendations contained in one type of communication may differ from recommendations contained in others, whether as a result of differing time horizons, methodologies, perspectives or otherwise. Deutsche Bank and/or its affiliates may also be holding debt or equity securities of the issuers it writes on. Analysts are paid in part based on the profitability of Deutsche Bank AG and its affiliates, which includes investment banking, trading and principal trading revenues.

Opinions, estimates and projections constitute the current judgment of the author as of the date of this report. They do not necessarily reflect the opinions of Deutsche Bank and are subject to change without notice. Deutsche Bank provides liquidity for buyers and sellers of securities issued by the companies it covers. Deutsche Bank research analysts sometimes have shorter-term trade ideas that may be inconsistent with Deutsche Bank's existing longer-term ratings. Some trade ideas for equities are listed as SOLAR ideas on the Research Website (<https://research.db.com/Research/>), and can be found on the general coverage list and also on the covered company's page. A SOLAR idea represents a high-conviction belief by an analyst that a stock will outperform or underperform the market and/or a specified sector over a time frame of no less than two weeks and no more than six months. In addition to SOLAR ideas, analysts may occasionally discuss with our clients, and with Deutsche Bank salespersons and traders, trading strategies or ideas that reference catalysts or events that may have a near-term or medium-term impact on the market price of the securities discussed in this report, which impact may be directionally counter to the analysts' current 12-month view of total return or investment return as described herein. Deutsche Bank has no obligation to update, modify or amend this report or to otherwise notify a recipient thereof if an opinion, forecast or estimate changes or becomes inaccurate. Coverage and the frequency of changes in market conditions and in both general and company-specific economic prospects make it difficult to update research at defined intervals. Updates are at the sole discretion of the coverage analyst or of the Research Department Management, and the majority of reports are published at irregular intervals. This report is provided for informational purposes only and does not take into account the particular investment objectives, financial situations, or needs of individual clients. It is not an offer or a solicitation of an offer to buy or sell any financial instruments or to participate in any particular trading strategy. Target prices are inherently imprecise and a product of the analyst's judgment. The financial instruments discussed in this report may not be suitable for all investors, and investors must make their own informed investment decisions. Prices and availability of financial instruments are subject to change without notice, and investment transactions can lead to losses as a result of price fluctuations and other factors. If a financial instrument is denominated in a currency other than an investor's currency, a change in exchange rates may adversely affect the investment. Past performance is not necessarily indicative of future results. Performance calculations exclude transaction costs, unless otherwise indicated. Unless otherwise indicated, prices are current as of the end of the previous trading session and are sourced from local exchanges via Reuters, Bloomberg and other vendors. Data is also sourced from Deutsche Bank, subject companies, and other parties.

The Deutsche Bank Research Department is independent of other business divisions of the Bank. Details regarding our organizational arrangements and information barriers we have to prevent and avoid conflicts of interest with respect to our research are available on our website (<https://research.db.com/Research/>) under Disclaimer.



Macroeconomic fluctuations often account for most of the risks associated with exposures to instruments that promise to pay fixed or variable interest rates. For an investor who is long fixed-rate instruments (thus receiving these cash flows), increases in interest rates naturally lift the discount factors applied to the expected cash flows and thus cause a loss. The longer the maturity of a certain cash flow and the higher the move in the discount factor, the higher will be the loss. Upside surprises in inflation, fiscal funding needs, and FX depreciation rates are among the most common adverse macroeconomic shocks to receivers. But counterparty exposure, issuer creditworthiness, client segmentation, regulation (including changes in assets holding limits for different types of investors), changes in tax policies, currency convertibility (which may constrain currency conversion, repatriation of profits and/or liquidation of positions), and settlement issues related to local clearing houses are also important risk factors. The sensitivity of fixed-income instruments to macroeconomic shocks may be mitigated by indexing the contracted cash flows to inflation, to FX depreciation, or to specified interest rates – these are common in emerging markets. The index fixings may – by construction – lag or mis-measure the actual move in the underlying variables they are intended to track. The choice of the proper fixing (or metric) is particularly important in swaps markets, where floating coupon rates (i.e., coupons indexed to a typically short-dated interest rate reference index) are exchanged for fixed coupons. Funding in a currency that differs from the currency in which coupons are denominated carries FX risk. Options on swaps (swaptions) the risks typical to options in addition to the risks related to rates movements.

Derivative transactions involve numerous risks including market, counterparty default and illiquidity risk. The appropriateness of these products for use by investors depends on the investors' own circumstances, including their tax position, their regulatory environment and the nature of their other assets and liabilities; as such, investors should take expert legal and financial advice before entering into any transaction similar to or inspired by the contents of this publication. The risk of loss in futures trading and options, foreign or domestic, can be substantial. As a result of the high degree of leverage obtainable in futures and options trading, losses may be incurred that are greater than the amount of funds initially deposited – up to theoretically unlimited losses. Trading in options involves risk and is not suitable for all investors. Prior to buying or selling an option, investors must review the "Characteristics and Risks of Standardized Options", at <http://www.optionsclearing.com/about/publications/character-risks.jsp>. If you are unable to access the website, please contact your Deutsche Bank representative for a copy of this important document.

Participants in foreign exchange transactions may incur risks arising from several factors, including: (i) exchange rates can be volatile and are subject to large fluctuations; (ii) the value of currencies may be affected by numerous market factors, including world and national economic, political and regulatory events, events in equity and debt markets and changes in interest rates; and (iii) currencies may be subject to devaluation or government-imposed exchange controls, which could affect the value of the currency. Investors in securities such as ADRs, whose values are affected by the currency of an underlying security, effectively assume currency risk.

Deutsche Bank is not acting as a financial adviser, consultant or fiduciary to you or any of your agents with respect to any information provided in this report. Deutsche Bank does not provide investment, legal, tax or accounting advice, and is not acting as an impartial adviser. Information contained herein is being provided on the basis that the recipient will make an independent assessment of the merits of any investment decision, and is not meant for retirement accounts or for any specific person or account type. The information we provide is directed only to persons we believe to be financially sophisticated, who are capable of evaluating investment risks independently, both in general and with regard to particular transactions and investment strategies, and who understand that Deutsche Bank has financial interests in the offering of its products and services. If this is not the case, or if you or your agent are an IRA or other retail investor receiving this directly from us, we ask that you inform us immediately.

Unless governing law provides otherwise, all transactions should be executed through the Deutsche Bank entity in the investor's home jurisdiction. Aside from within this report, important conflict disclosures can also be found at <https://research.db.com/Research/> on each company ' s research page. Investors are strongly encouraged to review this information before investing.

**United States:** Approved and/or distributed by Deutsche Bank Securities Incorporated, a member of FINRA, NFA and SIPC. Analysts located outside of the United States are employed by non-US affiliates that are not subject to FINRA regulations, including those regarding contacts with issuer companies.





**Germany:** Approved and/or distributed by Deutsche Bank AG, a joint stock corporation with limited liability incorporated in the Federal Republic of Germany with its principal office in Frankfurt am Main. Deutsche Bank AG is authorized under German Banking Law and is subject to supervision by the European Central Bank and by BaFin, Germany's Federal Financial Supervisory Authority.

**United Kingdom:** Approved and/or distributed by Deutsche Bank AG acting through its London Branch at Winchester House, 1 Great Winchester Street, London EC2N 2DB. Deutsche Bank AG in the United Kingdom is authorised by the Prudential Regulation Authority and is subject to limited regulation by the Prudential Regulation Authority and Financial Conduct Authority. Details about the extent of our authorisation and regulation are available on request.

**Hong Kong:** Distributed by Deutsche Bank AG, Hong Kong Branch or Deutsche Securities Asia Limited (save that any research relating to futures contracts within the meaning of the Hong Kong Securities and Futures Ordinance Cap. 571 shall be distributed solely by Deutsche Securities Asia Limited). The provisions set out above in the "Additional Information" section shall apply to the fullest extent permissible by local laws and regulations, including without limitation the Code of Conduct for Persons Licensed or Registered with the Securities and Futures Commission. .

**India:** Prepared by Deutsche Equities India Private Limited (DEIPL) having CIN: U65990MH2002PTC137431 and registered office at 14th Floor, The Capital, C-70, G Block, Bandra Kurla Complex Mumbai (India) 400051. Tel: + 91 22 7180 4444. It is registered by the Securities and Exchange Board of India (SEBI) as a Stock broker bearing registration nos.: NSE (Capital Market Segment) - INB231196834, NSE (F&O Segment) INF231196834, NSE (Currency Derivatives Segment) INE231196834, BSE (Capital Market Segment) INB011196830; Merchant Banker bearing SEBI Registration no.: INM000010833 and Research Analyst bearing SEBI Registration no.: INH000001741. DEIPL may have received administrative warnings from the SEBI for breaches of Indian regulations. The transmission of research through DEIPL is Deutsche Bank's determination and will not make a recipient a client of DEIPL. Deutsche Bank and/or its affiliate(s) may have debt holdings or positions in the subject company. With regard to information on associates, please refer to the "Shareholdings" section in the Annual Report at: <https://www.db.com/ir/en/annual-reports.htm>.

**Japan:** Approved and/or distributed by Deutsche Securities Inc.(DSI). Registration number - Registered as a financial instruments dealer by the Head of the Kanto Local Finance Bureau (Kinsho) No. 117. Member of associations: JSDA, Type II Financial Instruments Firms Association and The Financial Futures Association of Japan. Commissions and risks involved in stock transactions - for stock transactions, we charge stock commissions and consumption tax by multiplying the transaction amount by the commission rate agreed with each customer. Stock transactions can lead to losses as a result of share price fluctuations and other factors. Transactions in foreign stocks can lead to additional losses stemming from foreign exchange fluctuations. We may also charge commissions and fees for certain categories of investment advice, products and services. Recommended investment strategies, products and services carry the risk of losses to principal and other losses as a result of changes in market and/or economic trends, and/or fluctuations in market value. Before deciding on the purchase of financial products and/or services, customers should carefully read the relevant disclosures, prospectuses and other documentation. "Moody's", "Standard & Poor's", and "Fitch" mentioned in this report are not registered credit rating agencies in Japan unless Japan or "Nippon" is specifically designated in the name of the entity. Reports on Japanese listed companies not written by analysts of DSI are written by Deutsche Bank Group's analysts with the coverage companies specified by DSI. Some of the foreign securities stated on this report are not disclosed according to the Financial Instruments and Exchange Law of Japan. Target prices set by Deutsche Bank's equity analysts are based on a 12-month forecast period..

**Korea:** Distributed by Deutsche Securities Korea Co.

**South Africa:** Deutsche Bank AG Johannesburg is incorporated in the Federal Republic of Germany (Branch Register Number in South Africa: 1998/003298/10).

**Singapore:** This report is issued by Deutsche Bank AG, Singapore Branch or Deutsche Securities Asia Limited, Singapore Branch (One Raffles Quay #18-00 South Tower Singapore 048583, +65 6423 8001), which may be contacted in respect of any matters arising from, or in connection with, this report. Where this report is issued or promulgated by Deutsche Bank in Singapore to a person who is not an accredited investor, expert investor or institutional investor (as defined in the applicable Singapore laws and regulations), they accept legal responsibility to such person for its contents.





**Taiwan:** Information on securities/investments that trade in Taiwan is for your reference only. Readers should independently evaluate investment risks and are solely responsible for their investment decisions. Deutsche Bank research may not be distributed to the Taiwan public media or quoted or used by the Taiwan public media without written consent. Information on securities/instruments that do not trade in Taiwan is for informational purposes only and is not to be construed as a recommendation to trade in such securities/instruments. Deutsche Securities Asia Limited, Taipei Branch may not execute transactions for clients in these securities/instruments.

**Qatar:** Deutsche Bank AG in the Qatar Financial Centre (registered no. 00032) is regulated by the Qatar Financial Centre Regulatory Authority. Deutsche Bank AG - QFC Branch may undertake only the financial services activities that fall within the scope of its existing QFCRA license. Its principal place of business in the QFC: Qatar Financial Centre, Tower, West Bay, Level 5, PO Box 14928, Doha, Qatar. This information has been distributed by Deutsche Bank AG. Related financial products or services are only available only to Business Customers, as defined by the Qatar Financial Centre Regulatory Authority.

**Russia:** The information, interpretation and opinions submitted herein are not in the context of, and do not constitute, any appraisal or evaluation activity requiring a license in the Russian Federation.

**Kingdom of Saudi Arabia:** Deutsche Securities Saudi Arabia LLC Company (registered no. 07073-37) is regulated by the Capital Market Authority. Deutsche Securities Saudi Arabia may undertake only the financial services activities that fall within the scope of its existing CMA license. Its principal place of business in Saudi Arabia: King Fahad Road, Al Olaya District, P.O. Box 301809, Faisaliah Tower - 17th Floor, 11372 Riyadh, Saudi Arabia.

**United Arab Emirates:** Deutsche Bank AG in the Dubai International Financial Centre (registered no. 00045) is regulated by the Dubai Financial Services Authority. Deutsche Bank AG - DIFC Branch may undertake only the financial services activities that fall within the scope of its existing DFSA license. Its principal place of business in the DIFC: Dubai International Financial Centre, The Gate Village, Building 5, PO Box 504902, Dubai, U.A.E. This information has been distributed by Deutsche Bank AG. Related financial products or services are available only to Professional Clients, as defined by the Dubai Financial Services Authority.

**Australia and New Zealand:** This research is intended only for "wholesale clients" within the meaning of the Australian Corporations Act and New Zealand Financial Advisors Act, respectively. Please refer to Australia-specific research disclosures and related information at <https://australia.db.com/australia/content/research-information.html> Where research refers to any particular financial product recipients of the research should consider any product disclosure statement, prospectus or other applicable disclosure document before making any decision about whether to acquire the product.

Additional information relative to securities, other financial products or issuers discussed in this report is available upon request. This report may not be reproduced, distributed or published without Deutsche Bank's prior written consent. Copyright © 2018 Deutsche Bank AG




---

### David Folkerts-Landau

Group Chief Economist and Global Head of Research

Raj Hindocha  
Global Chief Operating Officer  
Research

Michael Spencer  
Head of APAC Research  
Global Head of Economics

Steve Pollard  
Head of Americas Research  
Global Head of Equity Research

Anthony Klarman  
Global Head of  
Debt Research

Paul Reynolds  
Head of EMEA  
Equity Research

Dave Clark  
Head of APAC  
Equity Research

Pam Finelli  
Global Head of  
Equity Derivatives Research

Andreas Neubauer  
Head of Research - Germany

Spyros Mesomeris  
Global Head of Quantitative  
and QIS Research

---

### International Production Locations

**Deutsche Bank AG**  
Deutsche Bank Place  
Level 16  
Corner of Hunter & Phillip Streets  
Sydney, NSW 2000  
Australia  
Tel: (61) 2 8258 1234

**Deutsche Bank AG**  
Mainzer Landstrasse 11-17  
60329 Frankfurt am Main  
Germany  
Tel: (49) 69 910 00

**Deutsche Bank AG**  
Filiale Hongkong  
International Commerce Centre,  
1 Austin Road West, Kowloon,  
Hong Kong  
Tel: (852) 2203 8888

**Deutsche Securities Inc.**  
2-11-1 Nagatacho  
Sanno Park Tower  
Chiyoda-ku, Tokyo 100-6171  
Japan  
Tel: (81) 3 5156 6770

**Deutsche Bank AG London**  
1 Great Winchester Street  
London EC2N 2EQ  
United Kingdom  
Tel: (44) 20 7545 8000

**Deutsche Bank Securities Inc.**  
60 Wall Street  
New York, NY 10005  
United States of America  
Tel: (1) 212 250 2500

---